



March 21, 2002

California Energy Commission  
Dockets Unit  
1516 Ninth Street, MS-4  
Sacramento, CA 95814

RE: Docket No. 99-DIST-GEN-(2): Exploring Revisions to Current Interconnection Rules Between Investor-owned and Publicly-owned Utility Distribution Companies and Distribute Generators

Dear Docket Clerk:

Enclosed for electronic filing, please find the Comments on a draft outline for a proposed Energy Commission Strategic Plan for Distributed Generation of the California Independent System Operator in Docket No. 99-DIST-GEN-(2).

Sincerely,

Jeanne M. Solé  
Regulatory Counsel

**STATE OF CALIFORNIA  
ENERGY RESOURCES CONSERVATION  
AND DEVELOPMENT COMMISSION**

In the Matter of:	)	Docket No. 99-DIST-GEN-(2)
	)	
Exploring Revisions to Current Interconnection	)	
Rules Between Investor-owned and	)	Energy Commission Distributed
Publicly-owned Utility Distribution Companies	)	Generation Strategic Plan
And Distributed Generators	)	
	)	
Evaluating CEQA Procedure for Siting	)	
Distributed Generation Facilities	)	February 21, 2002
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**COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

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**COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

In accordance with the February 21, 2002, call for additional comments of the Energy Resources, Conservation and Development Commission ("CEC" or "Commission"), the California Independent System Operator ("CA ISO") respectfully files these comment on a draft outline for a proposed Energy Commission Strategic Plan for Distributed Generation ("DG"). The CA ISO believes that the Commission's strategic plan should in addition to the issues listed address two issues: 1) the relationship between DG, grid reliability and Western Systems Coordinating Council (WSCC) and North American Electric Reliability Council (NERC) reliability criteria; and 2) harmonization of state and federal requirements.

The CA ISO is a non-profit public benefit corporation organized under the laws of the State of California and responsible for the reliable operation of the CA ISO Controlled Grid comprising the transmission systems of Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas and Electric Company,

and the City of Vernon, California, as well as for the coordination of the competitive Ancillary Services and real-time Energy markets in California. The CA ISO provides fair and non-discriminatory access to the CA ISO Controlled Grid, while at the same time honoring Existing Contracts. In addition, the CA ISO is the Control Area operator for the entire system within its electrical boundaries (defined by interchange metering with adjacent Control Areas such as Bonneville Power Administration, Sierra Pacific Power Company, Los Angeles Department of Water and Power, Arizona Public Service Company, and others), which encompasses the ISO Controlled Grid, the Distribution Systems of the California Investor Owned Utilities, and other transmission and distribution systems within California, including the systems of municipal, state and federal governmental entities. The CA ISO has the responsibility to “ensure the efficient use and reliable operation of the transmission grid consistent with the achievement of planning and operating reserve criteria no less stringent than those established by the Western Systems Coordinating Council and the North American Electric Reliability Council”. California Public Utilities Code Section 345.

**I. The relationship between DG, grid reliability and WSCC and NERC reliability criteria.**

During the past several years, the CA ISO has participated in proceedings before the California Public Utilities Commission ("CPUC") and the Federal Energy Regulatory Commission ("FERC"), as well as undertaking direct discussions with the DG community, to address DG related issues. With regards to the CA ISO, the most contentious of these issues has been a requirement in the CA ISO Tariff for gross metering of generation and load, and use of gross metering data as the billing determinant for some CA ISO charges to scheduling coordinators for load. The CA ISO believes that

these requirements are necessary in order for the CA ISO to accurately compute operating reserve requirements in accordance with WSCC minimum operating reliability criteria ("MORC"), and to accurately allocate the costs of meeting these requirements.<sup>1</sup>

In an attempt to accommodate DG, and recognizing that metering requirements could disproportionately affect small generators, the CA ISO created an exemption from its gross metering requirement for DG under 1MW that do not actively participate in CA ISO administered markets (Ancillary Services and Supplemental Energy). Nonetheless, the requirement remains contentious and is the subject of active litigation before FERC. The CA ISO is hopeful that a prompt FERC decision will bring closure to this contentious issue. The CA ISO's views on this issue are set forth in the short issues paper that is attached. The CA ISO considers that a comprehensive strategic plan for DG must address the issue of grid reliability and compliance with WSCC and NERC criteria. Moreover, to the extent that DG generally, or particular DG applications, are more reliable than other sources of power, as some DG proponents contend, these benefits should be presented to the WSCC and the CEC could play a role in coordinating any appropriate changes to WSCC MORC to recognize such benefits.

## **II. Harmonization of state and federal requirements.**

In the context of working with potential Participating Generators to ensure compliance with CA ISO requirements, the CA ISO has become aware of issues that arise because there has not been a comprehensive harmonization of state and federal requirements. For example, it appears that the CA ISO's gross metering requirement has

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<sup>1</sup> Failure by the CA ISO to carry sufficient Operating reserves, in addition to creating reliability concerns, could subject the CA ISO to fines under the WSCC Reliability Management System (RMS) compliance program.

been taken by some to mean that the gross metering billing determinants used for purposes of CA ISO billing and settlements must be the same billing determinants to be used for purposes of retail requirements and settling retail charges. If this were to be the case, it would be difficult for customers with on-site generation to benefit directly from such generation.<sup>2</sup>

If CA ISO gross metering billing determinants are not adjusted for use at the retail level, customers would be charged the full retail rate for any on-site consumption including consumption met by the on-site generator, and the generator would be required to find another buyer for its full production. This outcome is all the more likely now that direct access is no longer available, and the customer would not have the option through direct access to be the purchaser from its on-site generator. Moreover, unless state and federal requirements are harmonized, the prohibition against direct access could mean that customers having DG could never have the same scheduling coordinator for their generation and load. Absent direct access, the utilities are scheduling coordinators for all load in their service areas and the CA ISO has been informed that the utilities have not offered scheduling coordinator services for DG.

These outcomes are not, however, made inevitable by the CA ISO's gross metering requirement. Gross metering results in sufficient data to calculate both 1) the gross generation output from a generating unit, and the gross consumption by on-site load, and 2) the net generation obtained by the customer from the grid or exported by the

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<sup>2</sup> In the CPUC's DG proceeding, a first step was taken in harmonizing state and federal requirements. By taking out a generation demand component from standby charges, the CPUC recognized that the utilities no longer have generation standing by to serve on-site load when their DG ceases to operate. Instead, this function is undertaken by the CA ISO's Ancillary Service markets. Making further progress on this type of harmonization is important.

generator to the grid. Thus, it is possible to use the net information for certain retail purposes such as billing on-site load for energy consumption, provided that there is a clear understanding about how the CA ISO gross metering requirement is harmonized with retail requirements. It is therefore not inevitable that gross metering of generation and load to comply with CA ISO requirements must result in the inability of retail customers to be served from DG. Similarly, so long as it is established either that 1) on-site load can be served by a scheduling coordinator other than the utilities, or 2) utilities must offer scheduling coordination services for DG, the CA ISO's gross metering requirement need not be an impediment to on-site loads being served by DG.

The CEC could take a lead role in facilitating harmonization of these issues.

### **III. Conclusion.**

A comprehensive strategic plan for DG should address 1) the relationship between DG, grid reliability and WSCC and NERC reliability criteria; and 2) harmonization of state and federal requirements. The CA ISO would be happy to assist the CEC in addressing these issues as part of the development of a comprehensive strategic plan for DG.

Respectfully submitted this 21st of March, 2002 by:

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## ON-SITE LOAD -- FACT SHEET ON ISO ISSUES

The CA ISO is supportive of the development of distributed generation, along with other types of resources. More resources could help alleviate the reliability and economic issues challenging the California electricity market. Recently, the CA ISO instituted changes to its tariff to reduce barriers to distributed generation from participating in the market. Nonetheless, the CA ISO considers that all resources must pay their fair share of the cost of reliable, interconnected operations to the extent they choose to benefit from such operations. Further, by state law and its Federal Energy Regulatory Commission (FERC) approved Tariff, the CA ISO must comply with applicable Western Systems Coordinating Council (WSCC) requirements. CA ISO positions regarding on-site load balance these considerations.

Below is a more detailed explanation of issues that have arisen with regards to the CA ISO and its treatment of on-site load, a discussion of how state legislation regarding standby charges could affect these issues, and a list of the proceedings (state and federal in which issues related to on-site load have arisen).

### ISSUES

Issues include (described in further detail below):

- Consideration of On-site Load for Purposes of Calculating Reserves
- Allocation of Ancillary Service Charges
- Allocation of Grid Management Charges
- Allocation of transmission Access Charges
- Metering: ISO Prohibition Against Netting On-Site Generation and Load
- ISO Telemetry Requirements
- Consideration of On-site Load for Purposes of Calculating Reserves. There has been considerable discussion as to whether on-site load should be considered for purposes of calculating the level of operating reserves that the CA ISO must maintain in accordance with WSCC requirements. The CA ISO must maintain 7% reserves for firm load served by thermal generation, and 5% reserves for firm load served by hydro generation. Firm load includes on-site load served by distributed generation and QFs (qualifying facilities). This makes sense since the Automatic Generation Control and operating reserves systems operated by the CA ISO respond automatically to system fluctuations in generation and load, including when a generator serving on-site load ceases to operate.<sup>1</sup> Further, the WSCC in a recent deposition clarified that on-site load must be included in the calculation of firm load for purposes of calculating operating reserves. Accordingly, the CA ISO must ensure that there are adequate operating reserves to meet firm on-site load as it does for other load.

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<sup>1</sup> Units on Automatic Generation Control (AGC) (units providing Regulation) respond automatically to voltage fluctuations in the system, in order to maintain system reliability. After units on AGC respond to system changes, the CA ISO dispatches units providing operating reserves (units providing spinning and non-spinning reserve) to allow units on AGC to return to their original operating level.



- The CA ISO does not include in its calculation of firm load, on-site load that would be simultaneously curtailed when an associated on-site generator ceases to operate. This is because such load is not firm, and would not be served from the ISO Controlled Grid in the event the distributed generator ceases to operate.
- The CA ISO is aware of arguments that particular categories of generators are more reliable than other types of generators and that loads served by such generators should be entitled to carry less reserves than other loads. The CA ISO does not establish reserve requirements, these are established by the WSCC, which only distinguishes between hydro resources and thermal resources. The CA ISO has no objection to discussing with the WSCC further tiers to take into account the characteristics of different types of generation. In fact, the CA ISO is currently engaged in an exercise with the WSCC to reexamine reserve requirements generally. The result of this exercise should be to reduce reserve requirements for all load within the WSCC.
- The CA ISO is aware of arguments by on-site load that by paying for reserves as part of an energy charge at the time when their associated generator is not operating, on-site load pays for its fair share of reserves. Representatives of on-site load suggest that asking on-site load to pay for reserves 100% of the time, is like assuming on-site load is never served by the associated generator. This is untrue. The reserves carried by the CA ISO are only 5-7% of load. The same is true with regard to reserves carried for on-site load. Thus, the CA ISO assumes that a generator serving on-site load will meet load 92-95% of the time. As stated above, the CA ISO is happy to work with others to further revise WSCC requirements. However, saying that you are paying your fair share of ancillary services because you pay for reserves when you take energy, would be like saying that you pay for your share of insurance when you pay only one monthly installment on a year long insurance policy on the month when there was a need for the insurance to pay out.
- The CA ISO is aware of claims by some that the utilities did not consider on-site load for purposes of calculating reserves prior to electric industry restructuring. Whether this is true or not, it is true that prior to restructuring, the utilities had an obligation to have the resources (generation, transmission and distribution) in place to meet on-site load taking standby service when associated generating units were not operable. Utilities no longer must have adequate generation available to meet load (including on-site load). Rather, the ISO must ensure that there are adequate reserves to meet load even though it does not have direct control over generation. Recognizing this change, the CPUC in a draft decision recently stated that any remaining generation demand components should be taken out of standby rates. In the CA ISO's view this approach is appropriate.
- Allocation of Ancillary Service charges. Ancillary Service charges are the charges that the CA ISO flows through to Scheduling Coordinators for Ancillary Services that

the CA ISO procures on their behalf. The CA ISO allocates Ancillary Service charges to Scheduling Coordinators, rather than directly to customers. The CA ISO does not charge Scheduling Coordinators for Ancillary Services to the extent they self provide their share of Ancillary Services. Since the CA ISO must procure reserves for firm on-site load, the CA ISO considers firm on-site load for purposes of allocating Ancillary Service charges to Scheduling Coordinators. That is, a Scheduling Coordinator that represents on-site load has responsibility to either self provide Ancillary Services for such on-site load or to procure such service from the CA ISO. If the CA ISO allocated Ancillary Service charges in another manner, it would essentially be shifting costs to loads, other than on-site loads, for operating reserves that the CA ISO procures for the benefit of on-site loads. This would be unfair. Nonetheless, since the CA ISO allocates Ancillary Service charges to Scheduling Coordinators, rather than directly to customers, Scheduling Coordinators (including the utilities) are free to allocate CA ISO charges to their customers as they wish (subject, of course, to the requirements of applicable regulatory authorities).

- Allocation of Grid Management Charges. The Grid Management Charge (GMC) flows through to Scheduling Coordinators the cost of CA ISO operations, and includes three components: 1) the cost of CA ISO operations as control area operator (the "Control Area Services" component); 2) the cost of CA ISO operation of the Ancillary Service and Imbalance Energy markets ("Market Operations" component); and 3) the cost of CA ISO operation of Congestion Management (the "Congestion Management" component). The CA ISO allocates GMC to Scheduling Coordinators, rather than directly to customers. The Control Area Services component is based on firm load and exports represented by a Scheduling Coordinator including on-site load. This is because, as explained above, on-site load that does not disconnect simultaneously when the associated generator ceases to operate, benefits from services provided by the ISO as Control Area Operator. The Market Operations component is based on Ancillary Services and Imbalance Energy procured by the CA ISO on behalf of the Scheduling Coordinator (as opposed to self provided). The CA ISO assesses the Market Operations component of the GMC to a Scheduling Coordinators that participate in the CA ISO markets. If a Scheduling Coordinator does not self provide Ancillary Services for on-site load, or to the extent the Scheduling Coordinator sells or buys Ancillary Services and Imbalance Energy, it would pay the Market Operations component.
- Allocation of Transmission Access Charges. The CA ISO allocates the cost of transmission service through transmission access charges to Participating Transmission Owners (PTO) (currently the three investor owned utilities and the City of Vernon) and to Scheduling Coordinators who wheel through the CA ISO Controlled Grid. In its March 31, 2000 filing with the FERC on a transmission Access Charge (TAC), the CA ISO proposed that on-site load associated with generators in place after March 31 2000, should be included in firm load used to allocate the Access Charge to the PTO's. On-site load associated with generators in place before March 31, 2000, taking standby service and paying for transmission through a standby service charge would not be included in the firm load calculation.

Rather the revenues from the transmission component of the standby charge would be credited to the transmission revenue requirement of each PTO, thereby reducing the costs of transmission service born by other customers. The March 31, 2000 proposal by the CA ISO for new generators was premised on the fact that even when on-site load is not being served from the interconnected grid, the interconnected grid is the vehicle by which continuous reliable service is guaranteed to such load.

Nonetheless, recently in settlement discussions on the Access Charge, the CA ISO proposed that for an interim settlement period, it would treat all on-site load in the same manner as on-site load associated with generators in place by March 31, 2000. That is, on-site load paying for transmission through standby charges would not be allocated an additional Access Charge and payments by on-site load for transmission through standby charges would be credited against the PTOs transmission revenue requirement.

- Metering: ISO Prohibition Against Netting On-Site Generation and Load. In order to accurately calculate on-site load for purposes of allocating Ancillary Service and Grid Management Charges as described above, the CA ISO requires gross metering. That is, on-site load should not be deducted from the output of the associated generating unit for purposes of ISO metering. To minimize impacts of ISO requirements on small generators, the CA ISO recently amended its tariff to allow netting of generating unit output against load in the case of small generating units under 1MW. Units over 1MW must be separately metered, but the cost of metering for such units is proportionately less burdensome than for small units. It is worth noting that scheduling requirements track metering requirements because Scheduling Coordinators are assessed Imbalance Energy charges based on the difference between what is scheduled and what is metered. This means that to the extent a generator is required to meter gross output, it must also schedule gross output.
- ISO Telemetry Requirements. The CA ISO can require real time telemetry on the gross output (that is the total output of a unit without deducting on-site load) of generating units above 10MW and units below this size that chose to participate in the ISO Ancillary Services or Supplemental Energy Markets.<sup>2</sup> Real time telemetry is different from metering. Real time telemetry feeds information on a continuous (every 4 seconds) basis to the control center at the CA ISO. The CA ISO uses real time telemetry on generating units to understand what is happening on the system in real time, to ensure that Imbalance Energy is being provided in accordance with CA ISO dispatch instructions, to supply the load on the system in real time, for purposes of ensuring that there are adequate reserves on-line, and to determine whether there is a system emergency in effect. (Obtaining this type of real time data from loads would be prohibitively costly.) Real time telemetry data is sufficiently accurate for purposes of operating the system but is not sufficiently accurate to use for settlement purposes. Again, because the CA ISO must consider on-site load for purposes of maintaining adequate reserves, the CA ISO requires telemetry on gross generator output. To undertake its functions, the CA ISO must estimate in real time output of

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<sup>2</sup> The CA ISO currently requires telemetry on all units providing Ancillary Services to the ISO and has a plan in place to require telemetry for all units 10MW and above by 2002.

units that are not telemetered. The CA ISO has considered requiring telemetry on units under 10MW in order to be able to assess loads and reserves more accurately in real time, but has determined that while this objective is important, imposing the cost of telemetry on generating units under 10MW that do not participate in CA ISO markets would place an undue burden on these units.

### **IMPACT OF STATE LAWS ON STANDBY CHARGES**

The CA ISO tariff, including how it purchases and bills for Ancillary Services, how it recovers its costs, and how it allocates transmission charges, are subject to FERC jurisdiction. Accordingly, state law exempting on-site load from standby charges would not affect CA ISO tariff requirements for allocating Ancillary Service, transmission and Grid Management Charges to Scheduling Coordinators and utilities. To the extent utilities cannot assess a standby charge for on-site load, CA ISO charges allocated to the utilities for services benefiting on-site load would have to be recovered by the utilities from other customers. Moreover, state actions regarding standby charges that do not recognize federal jurisdictional components could result in inconsistent requirements between state and federal law. Finally, it is worth noting that if on-site load is exempt from paying standby charges, including the transmission component, under the current Access Charge proposal, such on-site load would be used for purposes of calculating the allocation of the Access Charge to a utility.

### **PROCEEDINGS**

#### **CPUC Proceeding on Distributed Generation.**

In the last two years, the CPUC held an extensive proceeding on distributed generation. As part of that proceeding, a distribution interconnection rule was developed and issues associated with operations and standby charges were litigated. Although the CA ISO tariff is FERC jurisdictional, parties raised all the issues described above in the proceeding. The CPUC recently issued a draft decision in the proceeding which states that generation demand charges should be taken out of standby charges. The CA ISO agrees with this approach, since it recognizes that the utilities no longer have generation standing by to meet on-site load. The decision also states that the CPUC should not support the CA ISO's position on gross metering, although the discussion associated with this conclusion focuses on transmission. Gross metering is primarily necessary to allow the CA ISO to accurately assess Ancillary Service and GMC charges to on-site load, in a manner that recognizes that it is now the CA ISO, through the operation of the Ancillary Service and Imbalance Energy markets that ensures that there are reserves available to meet on-site load when an associated generator does not operate. The CA ISO will file comments on the draft decision to this effect.

#### **Amendment 35, CA ISO Tariff Amendments to Facilitate Distributed Generation.**

At the end of last year, the CA ISO filed tariff amendments to reduce CA ISO requirements for distributed generation under 1MW and to allow generating units

between 1 and 10 MW to participate in CA ISO Ancillary Service markets. These amendments eliminated CA ISO metering requirements for distributed generators under 1MW that are metered in accordance with Local Regulatory Authority requirements. The amendments have been approved.

#### FERC Proceeding on the Transmission Access Charge.

As described above, in March 2000, the CA ISO filed a proposal for a transmission Access Charge with the FERC. Settlement discussions are underway.

#### FERC Proceeding on the Grid Management Charge.

On November 2000, the CA ISO made a Grid Management Charge filing with FERC that sets forth the methodology described above for allocating three GMC components to Scheduling Coordinators. Discovery in the case is underway. A schedule is in place for settlement discussions and the filing of testimony.

#### FERC proceeding on a QF Participating Generator Agreement (PGA).

The QF PGA proceeding is an off shoot of a proceeding underway since 1998 regarding the CA ISO Participating Generator agreement. Qualifying Facilities argued that a special agreement should be devised for QFs. The CA ISO entered into settlement discussions regarding this question. In this proceeding, QF's have raised concerns about CA ISO calculation of reserves including on-site load, the allocation of Ancillary Costs to on-site load, and CA ISO metering and telemetry requirements. After extensive discussions failed to produce a settlement, a hearing schedule was established. While settlement discussions continue, hearings are scheduled to begin on May 1, 2001. The deposition of the WSCC that clarified the requirement that the CA ISO include on-site load for purposes of calculating required control area operating reserves took place in this case.